USSR

UDC 632.934.1

VOLODKOVICH, S. D., and KAPLAN, G. I., All-Union Scientific Research Institute of Chemical Means for Plant Protection, Moscow, State Committee for Chemistry USSR

"Synthesis of Bromtan, A New Fungicide"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 43, May 70, No 5, pp 1140-1143

Abstract: Bromtan, 1,1,5-trichloro-1,2-dibrompentane, is synthesized in a two-step process: 1) dehydrochlorination of 1,1,1,5-tetrachloropentane to trichloropentene in the presence of aluminum chloride; 2) bromination of trichloropentene. Bromination temperature should be kept below 30°C, which requires a system of heat removal since this is an exothermal reaction. The resultant product is chemically pure and may be used without vacuum distillation. Bromtan is an effective soil fungicide and is recommended for combatting diseases of fruits, vegetables and flowers from indoors and outdoors. The chemical is also recommended for fighting cotton wilt and for eradicating various hibernating vectors of diseases such as apple scab. Bromtan may also be used as an antiseptic for nonmetallic materials.

1/1

USSR

UDC 539.4.015

YUSHCHENKO, K. A., STARTSEV, V. I., IL'ICHEV, V. Ya., MON'KO, G. G., LIVSHITS, L. A., KAPLAN, L. I., STEPANOV, G. A., and GRUDZINSKIY, B. V., Kiev, Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences, UkrSSR

"Low-Temperature Properties of Austenitic Steels"

Kiev, Problemy Prochnosti, No 10, Oct 70, pp 113-115

Abstract: A study was made of the mechanical properties of some steels of industrial melts destined for use at temperatures down to -269°C. A low carbon content was characteristic for the investigated steels, and some were also alloyed with nitrogen. The 21-16-8-N type stable-austenitic steel had the best strength properties and smallest reduction in plasticity and toughness at reduced temperatures.

1/1

USSR

UDC 621.313.322-82.004:621.311.21(47+57)

KAPLAN, M. YA.

"Segments of a Step Bearing with Synthetic Cermet Coating of the Friction Surface"

Elektrosila -- V sb. (Electric Power -- Collection of Works), No 28, Leningrad, Energiya Press, 1970, p 29 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D119)

Translation: Experiments in operating the step bearing of one of the hydrogenerators of the Verkhne-Svir Hydroelectric Power Plant and the advantages of its segments with synthetic cermet coating over segments lined with Babbit's metal are investigated.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--INTENSIFICATION OF THE PICKLING OF TRANSFORMER STEEL -U-

AUTHOR-(04)-AKSENOV, V.I., SEREBRYAKOV, G.V., MESYANEV, YU.R., KAPLAN, N.I.

COUNTRY OF INFO--USSR

SOURCE--METALLURG, MAR. 1970, (3), 30

DATE PUBLISHED----MAR70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--TRANSFORMER STEEL, PICKLING, METAL CLEANING, HYDROFLUORIC ACID, SULFURIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0922 STEP NO--UR/0130/70/000/003/0030/0030

CIRC ACCESSION NO--AP0124583
UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124583

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW AND IMPROVED METHOD OF PICKLING TRANSFORMER STEEL WHICH ELIMINATES SI DEPOSITS IS DESCRIBED. THE METAL IS TREATED IN AN HF-H SUB2 SO SUB4 MIXTURE FOR 10-20 MIN AT 55-60DEGREESC. THIS PROCESS ENTIRELY ELIMINATES THE LOSS OF METAL PREVIOUSLY SUFFERED AS A RESULT OF THE DEPOSITS AND IMPROVES THE OUTPUT OF THE METAL FINISHING DEPARTMENTS AS A WHOLE. POSSIBLE FURTHER REFINEMENTS TO THE PROCESS ARE CONSIDERED.

UNCLASSIFIED

1/2 031 UNCLASSIFIED

TITLE--THE INTERSTELLAR MEDIUM -U- PROCESSING DATE--23OCT70

AUTHOR--KAPLAN, S.A.

COUNTRY OF INFO--USSR

SOURCE--CAMBRIDGE, MASS., HARVARD UNIVERSITY PRESS, 1970, 475 P. 694

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--MONOGRAPH, INTERSTELLAR MATTER, HYDROGEN, COSMIC DUST, SPACE MAGNETIC FIELD, GAS DYNAMICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0068 STEP NO--US/0000/70/000/000/0001/0475

CIRC ACCESSION NO--AM0123840

UNCLASSIFIED

2/2 031 UNCLASSIFIED

CIRC ACCESSION NO--AM0123840 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS MONOGRAPH REPRESENTS THE FIRST COMPREHENSIVE REVIEW IN WORLD LITERATURE OF THE INTERSTELLAR MEDIUM IN ALL ITS ASPECTS AND BRINGS UNITY TO A BROAD FIELD OF RESEARCH IN WHICH INVESTIGATION HAS TENDED TO BE HIGHLY SPECIALIZED AND FRAGMENTED. THE DISTRIBUTION AND THE CHARACTERISITCS OF INTERSTELLAR HYDROGEN ARE DISCUSSED AND THE PHYSICAL STATE OF THE INTERSTELLAR GAS IS CONSIDERED. THE DISTRIBUTION OF INTERSTELLAR DUST IS INVESTIGATED AND THE OPTICS AND THE PHYSICAL PROPERTIES OF DUST PARTICLES ARE EXAMINED. INTERSTELLAR MAGNETIC FIELDS AND NONTHERMAL RADIO EMISSION ARE DISCUSSED. THE EVOLUTION OF THE INTERSTELLAR MEDIUM AND THE FORMATION OF GALAXIES ARE INVESTIGATED TAKING INTO ACCOUNT THE PRINCIPLES OF INTERSTELLAR GAS DYNAMICS. THE PROBABILITY OF ELEMENTARY PROCESSES FOR HYDROGEN LIKE ATOMS AND IONS, COEFFICIENTS OF EXCITATION, AND ELECTRONIC TERMS OF SIMPLE DIATOMIC MOLECULES ARE CONSIDERED IN THE APPENDIX.

FACILITY: GOR'KOVSKII GOSUDARSTVENNYI UNIVERSITET, GORKI, USSR.

UNCLASSIFIED

USSR

UDC 536.242:532.517.4

KAPLAN, SH. G.

"Concerning the Heat Transfer Mechanism in a Turbulent Liquid Flow at Supercritical Pressures"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol 21, No 3, Sep 71, pp 431-437

Abstract: A physical model for heat transfer in the case of forced liquid flow at supercritical pressures, which explains the observed anomalous heat transfer variations (increasing and decreasing) is presented. It is assumed that a shift in velocities of layers with temperatures $(T_m - T)$ and $(T_m - T)$ occurs in the boundary layer at certain relationship between the flow parameters, in the case of forced fluid flow. T_m is the heat capacity maximum temperature increases, while in the layer with (T_m+T) temperature the velocity decreases as compared with the velocity, before the boundary layer structure variation. This velocity decrease in the layer with (T_m+T) temperature leads to an increase in gas sublayer thickness and its termal resistance. Tests show that heat transfer increases in the case of large (T_m-T_1) when an increase

1/2

USSR

KAPLAN, SH. P., Inzhenerno-Fizicheskiy Zhurnal, Vol 21, No 3, Sep 71, pp 431-437

in molar transfer is the determining factor in the heat transfer process; and at small $(T_m - T_l)$, when an increase in the gas sublayer thermal resistance is the determining factor of the process, the heat transfer decreases. T_l is the liquid temperature.

2/2

USSR

UDC: 537.525.5

DYUZHEV, G. A., KAPLAN, V. B., MOYZHES, B. Ya., and YUR'YEV, V. G.

"Arc Discharge With a Strongly Ionized Cesium Plasma"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, vol. 41, No. 2, 1971, pp 453-456

Abstract: A description is given of experimentation involving an arc discharge in cesium vapor at a pressure of 0.1 to 2 mm Hg, with a potential difference between electrodes of from 5 to 100 volts, and at high current densities of from 10 to 100 a/cm^2. The purpose of the experimentation was to study the characteristics of plasmas of short, low-voltage arcs with high current densities and to investigate the possibility of getting high discharge current densities with distributed thermoelectronic emission from a cathode without transition to discharges with a cathode spot. The volt-ampere characteristics of the arc are plotted, and the current saturation they evince are discussed. The authors of this brief communication express their gratitude to B. I. Tsirkel' for developing the electric circuit, to V. P. Sachkov for preparing the experimental equipment, to S. M. Shkol'nik for assistance with the measurements, and to D. G. Baksht for his comments. They are connected with the Leningrad Semiconductor Institute.

1/1

USSR

UDC 578.59

KAPLAN, V. I., recommended by the Chair of General and Experimental Physics, Moscow State Pedagogical Institute imeni V. I. Lenin

"A Transistor Device for Recording Motor Activity of Small Animals"

Moscow, Biologicheskiye Nauki, No 11(107), 1972, pp 126-128

Abstract: A piezoelectric gauge is recommended as a convenient device for recording motility of small animals, for example, insects. In the experiments described, a cricket was affixed in the supine position to the supporting stand right next to a piezoelectric crystal. A thin rubber band looping around the crystal was attached to the insect's legs, and whenever the legs were moved, the rubber band slid across the crystal, thus stimulating it and discharging signals. A setup is also suggested in which the animal is allowed to move on a membrane tightly connected with the piezoelectric crystal. A circuit diagram shows the position of the amplifier, integrator, trigger, generator, and other transistors. The input and output resistance and other data are specified. The device is powered by three flashlight batteries. The output signals are of the standard type (500 hz, 200 msec in duration). They are recorded on paper and lend themselves to quantitative analyses, because the frequency of the signals is proportional to the motility of the animal.

1/1

1/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--FORMATION OF A SOLID PHASE DURING THE OXIDATION OF SULFUR CONTAINING JET FUELS -U-
AUTHOR-(02)-BOLSHAKOV, G.F., KAPLAN, Z.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970, 13(1), 56-62

DATE PUBLISHED--------70

SUBJECT AREAS--PROPULSION AND FUELS

TOPIC TAGS--ENTROPY, ORGANIC SULFUR COMPOUND, OXIDATION, JET FUEL, MERCAPTAN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1638 STEP NO--UR/0152/70/013/001/0056/0062

CIRC ACCESSION NO--AT0118617
UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0118617

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OXIDN. PRODUCTS OF THE TITLE FUELS COAGULATED AND PPTD. THE ENTROPY OF THE COLLOIDAL PARTICLES OBTAINED BY OXIDIZING FUEL CONTG. PHSH, (PHS)SUB2, AND PH SUB2 S INCREASED MORE STRONGLY THAN THAT CONTG. DIOCTYL DISULFIDE AND OCTYL MERCAPTAN. THE MAX. TENDENCY TO ASSOCN., COAGULATION, AND FORMATION OF A SOLID PHASE APPEARED WHEN THE HYDROCARBON SKELETON OF THE S AND O CONTG. OXIDN. PRODUCTS HAD A DIFFERENT STRUCTURE FROM THAT OF THE HYDROCARBON MEDIUM. PARAMETERS OF THE COAGULATION AND EFFECT OF THE S COMPDS. ARE PRESENTED. FACILITY: VOEN. AKAD. TYLA TRANSP., USSR.

UNCLASSIFIED

USSR

UDC 591.1:616-006

PIRUZYAN, L. A,, KAPLAN, Ye. Ya., MAKSIMOVA, I. A., and ROZENFEL'D, M. A.,
Institute of Chemical Physics

"Changes in the Content of Free Radicals in Mouse Organs During Hypoxia and Hyperoxia"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 1, 1970, pp 93-99

Abstract: Experiments on mice showed that during hyperoxia changes in free radical activity are the same in the liver, heart, brain, lungs, and muscles. The content of free radicals increases on the 2nd day, decreases on the 3rd day, and increases markedly on the 4th day in all the organs. During hypoxia, changes in the concentration of free radicals are also the same in liver, spleen, brain, and lungs. Free radical concentration increases on the first day and after that decreases below control values. However, the rate of change varies from organ to organ. For example, in the lungs and spleen the free radical level falls below controls on the 3rd day and continues to fall thereafter, whereas in the brain and liver this pattern is not observed until the 4th day. It was suggested that changes occurring in free radical activity as a result of hypoxia and hyperoxia may be one of the factors responsible for the impairment of certain physiological systems and metabolic processes associated with these states.

Acc. Nr: AP0047228 Ref. Code: UR 0216

PRIMARY SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, 1970, Nr 1, pp 93-97

Piruzyan, L. A.; Kaplan, Ye. Ya.; Maksimova, I. A.; Rozenfel'd, M. A.

CHANGES IN THE CONTENTS OF FREE RADICALS (FR) IN THE ORGANS OF MICE UNDER CONDITIONS OF HYPO- AND HYPEROXY

Institute of Chemical Physics Academy of Sciences USSR

Experimental data are discussed bearing on the kinetics of changes in the contents of free radicals in mice organs under conditions of hyperoxy and hypoxy. In the case of hyperoxy the character of changes are similar in the liver, the heart, the brain, the lungs and the muscles. A tendency towards an increase of the free radicals contents in observed after 48 hours which is thereafter followed by a decrease after 72 hours. A fairly well expressed increase of free radical activity is observed in all the organs examined after 96 hours.

1/2

REEL/FRAME
19790730

2

AP0047228

An increase of the exposure time of hypoxy is followed by a monotonous character of changes of free radicals concentration in the liver, the brain and the lungs of the experimental animals.

During the first 25 hours an increase of free radicals activity is noted which is later followed by a decrease going below control figures.

However free radicals concentration changes rates are unequal in different organs.

2/2

19790731

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--FINISHING TECHNOLOGY AND TYPES OF FABRICS MADE FROM POLYURETHANE ELASTOMER THREADS -U-

AUTHOR--(03)-BLAZAYTIS, G., KAPLANAS, V., PASKEVICIUS, V.

COUNTRY OF INFO--USSR

SOURCE--KHI. VOLOKNA 1970, (2), 65-7

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FABRIC, ELASTOMER, POLYURETHANE RESIN, CELLULOSE RESIN, ACETATE, NYLON, CLOTHING, DYE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0820 STEP NO--UR/0183/70/000/002/0065/0067

CIRC ACCESSION NO--AP0124487

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124487

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRODUCTION AND PROPERTIES ARE DESCRIBED OF ELASTIC CORDS CONSISTING OF A POLYURETHANE CORE AND 2 WINDINGS, THE INNER TYPICALLY OF CELLULOSE ACETATE AND THE OUTER OF NYLON 6 THREADS. SUCH CORDS CAN BE DYED BY USING STD. EQUIPMENT AND ARE ESP. SUITABLE FOR THE MANUF. OF SWIM SUITS, WOMEN'S UNDERGARMENTS, AND SPECIALITY SPORT CLOTHES. FACILITY: LITOV. NAUCH.-ISSLED. INST. TEKST. PROM., USSR.

UNCLASSIFIED

KAPLANOV, M. R.

Space Communications

Tuesday, May 29, 1973

G. LAXERDE

301H11125/B

Sci Novosti
Daily Review
29 May 73

A SPACE COMMUNICATIONS CHANNEL

Professor M. Kaplanov

= Space Communications

The article on space communications given below ... discusses the effect of space research on the development of communications technology.

Space communications have become part and parcel of our life. At present about 40 Orbita stations receive programmes of the Moscow TV Centre. Satellite communications have ranked alongside the old conventional means, such as radio relay and cable lines. Today television broadcasting embraces 70 per cent of Soviet territory. Under the Directives of the 24th CPSU Congress for the five-year national economic development plan of the USSR for 1971-1975, work is to be carried out to ensure stable TV transmission throughout the country. Clearly this problem can be solved only with the aid of communications satellites.

There are two methods of receiving on the Earth TV programmes relayed by communications satellites. One is called the distributive method. This method is used in particular by the Orbita system. To receive signals from space a system of this type calls for special, relatively big antennas 10-25 metres in diameter, and a complex, highly sensitive receiving equipment. After that, the signal received is fed to a local TV centre, is amplified by the local radio transmitter and received, as usual, by domestic TV sets. The advantage of this method lies in the possibility to use conventional domestic TV receivers.

As is known, the socialist countries have established an international satellite communications system, "Intersputnik". It is open to accession by all countries interested in using outer space for progressive purposes. The Soviet Union has afforded to all participating countries the possibility to use Soviet communications satellites as a technical basis of the system at the first stages.

Apart from the widely known Molnia-1 the Soviet Union has recently launched the Molnia-2 satellite. The Molnia-2 satellites differ basically from Molnia-1 by the use of higher frequencies, of the so-called centimetre waveband, for the relaying of signals. Mastering this region of the spectrum has been necessary from many points of view.

M.R.

USSR UDC 621.771:665.521.5

STARCHENKO, D. I., Doctor of Technical Sciences, SLYUSAREV, A. T., Candidate of Chemical Sciences, and KAPLANOV, V. I., Candidate of Technical Sciences

"Efficiency of TPS-K Lubricant in High-Speed Cold-Rolling of Steel Sheets"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 5, Sep-Oct 70, pp 21-23

Abstract: Results are presented from tests conducted on the new TPS-K lubricant, which was developed jointly by the Zhdanov Metallurgical Institute and the Bryansk Pilot Petroleum and Oil Plant. The lubricant is being used successfully in thin sheet rolling of low-carbon and transformer steels, in wire and tube drawing from nonferrous metals, and in the production of bent profiles. Tests were conducted in the rolling of dry strips by dry rollers, and also in using the TPS-K lubricant with 5, 10, 20, 30, 40, 50, 75, and 100% concentration of surface-active substances. Similar tests were conducted for purposes of comparison using industrial 20 oil and palm and castor oils.

1/1

USSR

UDC 621.771.24

STARCHENKO, D. I., KAPLANOV, V. I., and SHAPKO, V. M., Zhdanov

"Study of Influence of Conditions of High-Speed Cold Rolling on the Mechanical Properties of Steel"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan 71, pp 96-100

Abstract: Studies were performed on high-speed cold rolling of steel strips on a type-300 laboratory mill with a roller speed of from 4.5 to 30 m/sec, using various well-known lubricants: type PKS-1, castor oil, and distilled water, as well as three new technological lubricants developed at the Zhdanov Metallurgical Institute. The new lubricants consist of: 10% water emulsion of the product of condensation of C_{17}-C_{20} synthetic fatty acids with triethanolamine, 30% type 20 industrial oil (TPS-17M30); 30% solution of the product of condensation of still residue synthetic fatty acids with triethanolamine in type 20

1/2

USSR

STARCHENKO, D. I., et al., Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan 71, pp 96-100

industrial oil (type TPS-K30); and a 50% solution of still residue synthetic fatty acid condensate with triethanolamine in type 20 industrial oil (TPS-K50). The hardness of thin-sheet low-alloy steel under high-speed rolling conditions can be considered to depend on the degree of total deformation, and to be independent of the type of technological lubricant, speed of rollers, and number of passes. Based on the experimental data, formulas are produced for the functional dependence of hardness, yield point, and ultimate strength on degree of deformation, yield point, and ultimate strength on hardness, and also yield point on ultimate strength and ultimate strength on yield point of work-hardened low-alloy steel strip.

USSR

UDC 612.017.1-06:612.273.1.017.2

KAPLANSKIY, A. S., and DURNOVA, G. N.

"The Effect of Partial Adaptation to Hypoxia on Immunobiological Reactivity"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 4, 1971, pp 68-70

Translation: Neutrophil phagocytosis decreases slightly in mice in the course of partial adptation ot hypoxia. There is also a decrease in antibody formation and in the number of antibody-containing cells in the lymph nodes along with hypoplasia of the latter. These shifts are less pronounced than during continuous adaptation to hypoxia.

Since partial adaptation to hypoxia is an effective means of increasing the resistance of animals and of man to a number of extreme factors, including hypoxia (2), we studied in this work the immunological reactivity of the body under conditions of partial conditioning to hypoxia and after such training. The literature on the subject is sparse and contradictory (3, 9, 10).

Procedure

Experiments were performed on 150 male mice weighing about 20 g and divided into 2 equal groups - experimental and control. The experimental

USSR

KAPLANSKIY, A. S., and DURNOVA, G. N., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 4, 1971, pp 68-70

animals were placed 6 hours a day for one month in a ventilated pressure chamber (405 mm Hg - altitude of 5,000 m). The control group remained in an atmosphere with normal oxygen content. Immunological activity was studied in the course of partial adaptation to hypoxia by mice injected subcutaneously in the inguinal region with 40 µg of typhoid Vi antigen on the 20th day of the experiment. The mice were sacrificed on days 24, 26, and 29 of the experiment (seven experimental and seven control each time). Immunological activity after the end of partial adaptation to hypoxia was studied in mice immunized twice subcutaneously in the inguinal region with alcohol typhoid vaccine (400 million microbial cells) or with bovine serum albumin (BSA) in a dose of 200 µg. The first injection of antigens was given on day 7, the second, 7 days after the end of partial adaptation to hypoxia. The mice immunized with typhoid vaccine were sacrificed on days 4, 7, and 10 (10 experimental and 10 control each time) after the second immunization. The body weight, weight of the regional lymph nodes (inguinal), phagocytic activity of neutrophils (1), abdominal macrophages (12), and titers of Vi or O antibodies (passive hemagglutination method) were determined in the mice that received Vi antigen or typhoid vaccine. The inguinal lymph nodes

KAPLANSKIY, A. S., and DURNOVA, G. N., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 4, 1971, pp 68-70

were fixed in Carnoy's fluid and embedded in paraffin. Serial sections were stained with hematoxylin-eosin and methyl greenpyronine (control with nuclease). The content of immunocompetent cells was studied by the indirect fluorescent antibody method (11) in the lymph nodes of mice immunized with BSA. The data obtained in the experiment were statistically analyzed.

Results

The condition of the mice remained good throughout the experiment. There was no loss of weight compared with controls and none of the experimental animals died.

No significant shifts were noted in phagocytosis by neutrophils and macrophages during and after partial adaptation to hypoxia. Only the mice sacrificed on days 24 and 29 exhibited a tendency fof phagocytic activity to diminish. Although the number of phagocytizing cells decreased, their absorptive capacity remained unchanged.

The formation of Vi antibodies in experimental mice sacrificed on days 24, 26, and 29 decreased compared with controls. The decrease took place against a background of hypoplasia of the regional lymph nodes. A drop in weight of the lymph nodes was observed in experimental mice both during and after partial adaptation to hypoxia. Although there was a statistically significant difference only on day 24 of the experiment and on day 17 after

3/5

USSR

KAPLANSKIY, A. S., and DURNOVA, G. N., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 4, 1971, pp 68-70

it was over, the weight of the lymph nodes in the experimental mice clearly tended to decrease. The hypoplasia of the lymph nodes, as shown by the results of immunomorphological analysis, was caused by reduction in the number of plasmocytes in the medulla of the nodes and especially by reduction in the number of lymph cells in the cortex of the nodes, as manifested by an attenuation of the cortex, shrinkage of the follicles and their light centers, and reduction in number of sinuses in lymph nodes of experimental mice was also less pronounced than in the control.

Despite the persistent hypoplasia of the lymph nodes, titers of O antibodies in experimental mice on days 11, 14, and 17 after the end of partial adaptation to hypoxia were the same as in the control.

Immunofluorescent analysis of the lymph nodes of mice immunized with BSA revealed the presence of antibodies in mature and immature plasma cells which were frequently arranged in groups of 5 to 20 in the medulla of the lymph nodes. The number of cells shown to contain antibodies by the fluorescent antibody method was small compared with the total number of plasma cells. The number of immunocompetent cells in the lymph nodes was somewhat smaller in five of seven experimental mice sacrificed 5 days after the second immuniza-

4/5

USSR

KAPLANSKIY, A. S., and DURNOVA, G. N., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 4, 1971, pp 68-70

tion than in the control, as manifested chiefly by the reduction in number of focal accumulations of these cells in the medulla of the lymph nodes and by a reduction in their number in individual accumulations. No differences were found between control and experimental mice sacrificed on days 9 and 14 after the second injection of BSA with respect to the number of immunocompetent cells in the lymph nodes.

Thus, the above data show that partial adaptation to hypoxia produces shifts in mice, including the immunocompetent organs, that are similar to, if less pronounced than, the shifts that occur during continuous adaptation to hypoxia (4, 5, 6). These shifts indicate depression of immunobiological reactivity. Some of them (hypoplasia of the lymph nodes) persist for about 2 weeks after the end of partial adaptation to hypoxia.

5/5

USSR UDC 612.273:[612.017.1+612.014.1

DURNOVA, G. N., KAPLANSKIY, A. S., and PORTUGALOV, V. V., Moscow

"Cytochemical and Immunological Investigation of the Reactivity of Mice Kept in an Atmosphere With a High Oxygen Content"

Moscow, Arkhiv Patalogii, Vol 32, No 10, 1970, pp 49-53

Abstract: Exposure of male mice for 10 days to an atmosphere containing 69% oxygen resulted in inhibition of both phagocytosis by neutrophils and phosphorylase activity in neutrophils. Exposure also increased their glycogen content. The high oxygen level had no effect on phagocytosis by macrophages, antibody production, or resistance to infection with a live S. typhi culture after immunization with Vi-antigen. The toxic effects of the oxygen were manifested by insignificant lesions in the lungs, liver, thymus, and lymph nodes. There were no visible changes in the heart, kidneys, adrenals, or testes.

1/1

AA0044786

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

243909 FORCE INTO PRESSURE CONVERTING DEVICE, in which air flows through the pipe (1) and throttle (2) into the measurement chamber (3), and if no load is applied to the diaphragm (6) rigid centre, the air from the measurement chamber is drained into atmosphere through the nozzle (7). When a load G is applied to the diaphragm rigid centre (4), a pressure builds up in the hydraulic chamber (9) proportional to the applied load. This pressure generates on the diaphragm (5) a force directed downwards and proportional to its effective area. The diaphragm (5) rigid centre is rigidly connected with that of the diaphragm (4).

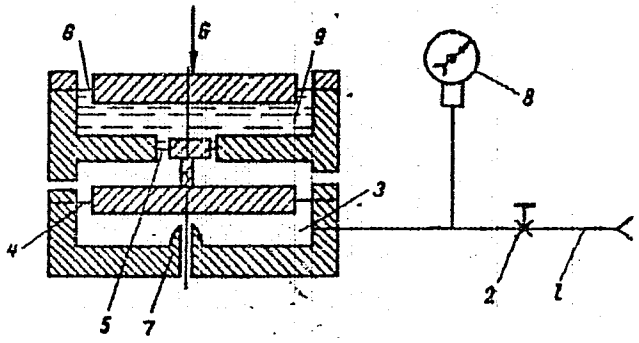
20.3.67 as 1141493/18-10. Add to 155977. KARLANSKII, Vl.F. et alia. (26.9.69) Bul 17/14.5.69. Class 42k. Int.Cl. G 01l.

1/2

21

19771601

AA0044786



243909 AUTHORS: Kaplanskiy, Yu. Ye.; Krylov, V. G.

2/2

19771602

Acc. Nr: AP0036618 Abstracting Service: CHEMICAL ABST. 4/70 Ref. Code: UR0366

K

78301e Chemistry of dienes and their derivatives. III. Addition of tert-butyl chloride to 2,3-dichloro-1,3-butadiene. Synthesis of 1-alkoxy-2,3-dichloro-5,5-dimethyl-2-hexenes. Mkryan, G. M.; Kazaryan, R. A.; Zakaryan, R. P.; Kaplanyan, E. E. (Yses. Nauch.-Issled. Proekt. Inst. Polim. Prod., USSR). *Zh. Org. Khim.* 1970, 6(1), 25–6 (Russ). The reaction of $H_2C:CClCCl:CH_2$ with *tert*-BuCl at −20° in the presence of $AlCl_3$ gave good yields of $Me_3CCH_2CCl:CClCH_2Cl$ (I). When $ZnCl_2$ was used as the catalyst the reaction rate was slower and only 22% I was obtained. Oxidn. of I with $KMnO_4$ gave $(CO_2H)_2$ and $Me_3CCH_2CO_2H$. The reaction of I with ROH (R is Me, Et, Pr, Bu, or amyl) in alk. soln. gave 78.6–89.9% $Me_3CCH_2CCl:CClCH_2OR$ and ≤1%, $Me_3CCH:CClCCl:CH_2$.

CPJR

1/1

ACS

REEL/FRAME
19721472

7

USSR

UDC 661.143:546.41'78

KRONGAUZ, V. G., MIKHALEV, A. A. and KAPLENOV, I. G.,

"Effect of Purity and Thermal History on the Thermal De-excitation of Calcium Tungstate"

Stavropol' Sb. nauch. tr. VNII lyuminoforov i osobo chist. beshchestv (Collection of Scientific Papers of the All-Union Scientific Research Institute of Phosphors and Ultra-Pure Compounds), No 7, 1972, pp 27-32 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L198)

Translation: The thermal relaxation curves were studied after excitation with UV light and Xrays in samples of $CaWO_4$ obtained from the fractional recrystallation of tungstic acid. The nature of the factors causing differences in the structure of the curves of different samples was determined.

1/1

USSR UDC 661.143:546.41'78

KRONRAYZ, V. G., MERZLYAKOV, A. T., KAPLENOV, I. G., GURVICH, A. M., and MIKHALEV, A. A.

Sb. nauch. tr. VNII lyuminoforov i asobo chist. vechshestv (Collection of Scientific Works From the All-Union Scientific Research Institue of Lumenophors and Principles for Purifying These Compounds), Vyp 7, 1972, pp 72-74 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L162 by N. Sh.)

Translation: A preliminary study of the photostimulated luminescence allowed the establishment of the spectral characteristics of a series of basic capture centers in $CaWO_4$ and explained the relationship between the excited absorption bands and peaks of thermal-stimulated luminescence. This permitted the expectation that further study of the photostimulated luminescence in conplexes by other methods would give useful information on the nature of the capture centers, the mechanism of the recombination processes, and the role of these factors in the luminescence of this interesting and industrially important class of luminescent compounds of the type $CaWO_4$.

1/1

USSR UDC 661.143

DESYUK, V. G., KAPLENOV, I. G., and MAYOROV, M. I.

"Photoelectric Registration of Total Light "

Sb. nauch. tr. VNII lyuminoforov i osobo chist. veshchestv (Collected Scientific Works of the All-Union Scientific Research Institute of Phosphors and Extra Pure Substances), 1971, vyp 6, pp 149-151 (from RZh-Khimiya, No 17 Oct 72, Abstract No 17L172)

Translation: By using a converter which changes an input signal to pulses, the total light can be registered with respect to attenuation in 3-5 minutes, which is a considerable gain over the photographic method. The installation can be used for determining other integrated luminescence characteristics.

1/1

USSR

KAPLER, R., NEKRASOV, L. I., IROSHNIKOVA, N. G., and MAKLEYEVA, N. A., Chemistry Faculty, Moscow State University imeni M. V. Lomonosov

"Paramagnetic Properties of Adsorption Layers of Chlorophyll a and b on Aluminum Oxide"

Moscow, Biofizika, Vol 16, No 1, Jan/Feb 71, pp 32-38

Abstract: Analysis of the electron paramagnetic resonance spectra of adsorbed chlorophyll a and b showed that when chlorophyll is adsorbed on aluminum hydroxide, the concentration of paramagnetic centers is 0.6 to 1.1% of the quantity of adsorbed molecules of the pigments. The number of paramagnetic centers was found to be related to the temperature, duration of light, and conditions under which the samples were kept (vacuum or air). The thermal energy required to activate the formation of unpaired electrons was determined. It is conjectured that the source of the electron paramagnetic resonance signal may be dimers formed from the strong inner overlapping of the pi-electrons of two adjacent chromatophores. The dimers are stabilized by the formation of a complex with charge transfer.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--HIGHLY LOCAL X RAY MICROANALYZER -U-

AUTHOR-(05)-VASICHEV, V.N., VERESHCHAGIN, YE.N., DERSHVARTS, G.V., KARLICHNYY, V.N., KISEL, G.D.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 217-20

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON MICROSCOPE, X RAY SPECTROMETER, MICROCHEMICAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1476 STEP NO--UR/0120/70/001/000/0217/0220

CIRC ACCESSION NO--AP0106232

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0106232

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ELECTRON MICROSCOPE X RAY MICROANALYZER IS DESCRIBED WHICH MAKES IT POSSIBLE TO CONDUCT AN X RAY SPECTRUM ANAL. OF AREAS WITH A DIAM. SIMILAR TO OR LESS THAN 500 ANGSTROM. RESULTS OF TESTING OF THE LIGHTING SCHEME OF THE DEVICE AND ITS NONDISPERSION SYSTEM OF REGISTRATION OF CHARACTERISTIC SPECTRA ARE PUBLISHED. LINES OF THE CHARACTERISTIC SPECTRUM CAN BE REGISTERED IF THE WT. OF THE PART OF THE MATERIAL UNDER STUDY EQUALS 1.7 TIMES 10 PRIME NEGATIVE17 G.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--DETERMINATION OF ALKALI, ALKALINE EARTH, AND RARE EARTH ELEMENTS BY STRIPPING ANALYSIS. I. DETERMINATION OF ALKALI ELEMENTS -U-

AUTHOR-(03)-IVANOV, V.K., STROMBERG, A.G., KAPLIN, A.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 584-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RARE EARTH METAL, ALKALI METAL, CHEMICAL ANALYSIS, METAL ELECTRODE, MERCURY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0470 STEP NO--UR/0075/70/025/003/0584/0586

CIRC ACCESSION NO--AP0126222

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126222

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANODIC PEAKS OF LI, K, NA, RB, AND CS WITH BU SUB4 NI SOLNS. IN HCONME SUB2 AS SUPPORTING ELECTROLYTES WERE OBTAINED BY ANODIC STRIPPING WITH A HG ELECTRODE. WITHIN THE STUDIED CONCN. RANGE THE HEIGHT OF THE ANODIC PEAKS FOR ALL THE ELEMENTS IS A LINEAR FUNCTION OF THEIR CONCN. (8 TIMES 10 PRIME NEGATIVE6 5 TIMES 10 PRIME NEGATIVE5 M). FACILITY: TOMSK POLYTECH. INST., TOMSK, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--DETERMINATION OF 10 PRIME NEGATIVE7 10 PRIME NEGATIVE6 PERCENT IMPURITIES IN LEAD BY STRIPPING ANALYSIS -U-

AUTHOR-(03)-KAPLIN, A.A., KATYUKHIN, V.E., STROMBERG, A.G.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(1), 18-19

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--LEAD, METAL CHEMICAL ANALYSIS, METAL IMPURITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0302 STEP NO--UR/0032/70/036/001/0018/0019

CIRC ACCESSION NO--AP0113232

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0113232

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PB SAMPLE, 0.2 G WAS DISSOLVED BY GENTLE HEATING IN 5 ML OF 3N HNO SUB3. THE SOLN. WAS ELECTR LYZED FOR 1.5 HR WITH A CYLINDRICAL PT GAUZE ELECTRODE AND A CONST. C.D OF 0.1 A-CM PRIME2. THE DARK BROWN PPT. OF PBO SUB2 (PLUS IMPURITIES) ON THE ANODE WAS DISSOLVED IN 6-10 ML 1N HNO SUB3 CONTG. 0.1 ML 30PERCENT H SUB2 O SUB2. THE SOLN. WAS EVAPD. TO DRYNESS, REDISSOLVED IN 3 ML H SUB2 O AND REEVAPD. 4 TIMES. THE RESIDUE WAS DISSOLVED IN 3 ML OF 0.01 M KCL AND ZN WAS DETD. BY POLAROGRAPHY. AFTER ADDN. OF 0.03 ML OF ETHYLENEDIAMINE SOL., IN AND CD WERE DETD. SIMILARLY. THE POTENTIAL WAS SMALLER THAN OR EQUAL TO 1.6 V. PEAK HEIGHTS ARE PROPORTIONAL TO CONCN. TOTAL ANAL. TIME WAS 4-5 HR. THE DETNS. OF ZU, CD, AND IN AT THE 10 PRIME NEGATIVE8PERCENT LEVEL ARE CONSIDERED ACCURATE WITH A CONFIDENCE LIMIT GREATER THAN 95PERCENT.

UNCLASSIFIED

USSR

UDC: None

VOROB'YEV, A. A., BOBUDAYEV, A. Ya., VOROB'YEV, S. A., and KAPLIN, V. V.

"Scattering of Electrons by Monocrystals"

Leningrad, Fizika Tverdogo Tela, vol 14, No 7, 1972, pp 2157-2159

Abstract: This paper is the consequence of an earlier one (H.C.H. Nip et al, Phys. Lett., 28A, 1968, p 324) in which the possibility of the existence of stable trajectories for fast electrons scattered by a monocrystal was discussed. Such an effect should result in the anomalous passage of electrons through the crystal if the axis of the incident beam coincides with one of the crystallographic directions of the target. This paper describes measurements made to detect such an anomalous electron flow. The electron beam was obtained from a radioactive source, $(Sr+Y)^{90}$, with the angular scattering of the electron beam incident on the target reduced to 0.5^{o} through strong collimation. NaCl monocrystals were used as the target, and the recording device was the USD-1 scintillation counter. A curve is plotted for the electron scattering by a 190-μ-thick NaCl crystal as a function of the rotational angle of the crystal axis with respect to the direction of the incident beam. The authors, members of the S. M. Kirov Polytechnical Institute at

1/2

USSR

VOROB'YEV, A. A., et al, Fizika tverdogo tela, vol 14, No 7, 1972, pp 2157-2159

Tomsk, express their gratitude to I. A. Tsekhanovskiy for his comments on the experimental results.

2/2

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--A HASTY DECISION -U-

AUTHOR--KAPLIN, YU.

COUNTRY OF INFO--USSR

SOURCE--VODNYY TRANSPORT, JULY 11, 1970, P 2, COLS 5-7

DATE PUBLISHED--11JUL70

SUBJECT AREAS--MATERIALS, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--CORROSION R AND D, METALLURGIC PERSONNEL, RESEARCH FACILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/0850 STEP NO--UR/9028/70/000/000/0002/0002

CIRC ACCESSION NO--AN0122894

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AN0122894

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE CRITICIZES THE DECISION MADE BY V. A. RUDENKO, DIRECTOR OF THE FAR EASTERN AFFILIATE OF THE TSNIIMF, TO REDUCE THE STAFF OF THE CORROSION LABORATORY FROM 13 TO 4 PEOPLE. KAPLIN CLAIMS THAT THE LABORATORY WAS THE ONLY LABORATORY OF ITS KIND IN THE SOVIET FAR EAST AND THAT IT DID BOTH APPLIED AND BASIC RESEARCH. AN APPEAL TO THE MINISTRY OF MERCHANT MARINE IS MADE TO RESTORE THE STATUS OF THE LABORATORY. THE FOLLOWING STAFF MEMBERS OF THE LABORATORY ARE MENTIONED, GRADUATE STUDENT G. I. SHCHERBININA, SENIOR ENGINEER V. N. OZEROVA, ENGINEERS R. N. METAL'SKAYA AND L. M. NAUMOVA, AND GRADUATE STUDENT A. V. KUDRIN.

UNCLASSIFIED

USSR

UDC 621.785.532

ZHUNKOVSKIY, G. L., and KAPLINA, G. S., Institute of Problems of Material Science, Academy of Sciences Ukr SSR

"Some Principles of the Initial Stage of the Nitriding Process"

Kiev, Metallofizika, No 39, 1972, pp 91-96

Abstract: The mechanism of the initial stage of interaction of nitrogen-containing media with a metal was examined and the role of electron interaction in the process of nitrogen atom entrance into the sphere of reaction diffusion was shown. The mechanism of the effect of the most often encountered impurities on the interaction of nitrogen with a metal was examined in detail; the basic requirements issuing from this study were formulated and must be documented for the selection and subsequent standardization of a reaction mixture for nitriding. 2 figures, 35 bibliographic references.

1/1

USSR

UDC 669.018.8:669.29

BRYNZA, A. P., PASTUKHOVA, O. M., and KAPLINA, G. S., Dnepropetrovsk State University, Academy of Sciences UkrSSR, and Institute of the Problems of Material Science

"Investigation of the Corrosion Resistance of Nitrided Titanium"

Moscow, Zashchita Metallov, Vol 7, No 4, Jul-Aug 71, pp 466-468

Abstract: The effect of chemico-thermal processing by nitration on the corrosion resistance of VT1-1 and OT-4 titanium alloys in solutions of sulfuric acid, hydrochloric acid, nitric acid, and potassium hydroxide acid was investigated on 15 x 20 mm specimens, 0.4 and 0.9 mm thick, placed in a quartz vessel through which was passed nitrogen of high frequency. The corrosion was investigated by roentgenostructural, metallographic, and gravimetric analyses. The results are discussed by reference to tabulated data of corrosion rates and the microstructure of the VT1-1 alloy. Nitrided Ti-specimens showed no corrosion signs in solutions of 31% HCl, but they had a weight increase of 0.004 g per specimen. Their nitride layer was not disrupted, but was slightly dark, probably due to the development of oxide layers on its surface. One illustr., two tables, seven biblio. refs.

1/1

Electromagnetic Wave Propagation

USSR

Yu. I. Solov'yev (editor), L. M. Kaplina (technical editor)

Propagation of Radio Waves with Meteors (Meteornoye rasprostraneniye radiovoln), Kazan', Izd-vo Kazanskogo universiteta, 1970, 700 copies 128 pages

ABSTRACT: The book contains a collection of articles on the results of research on meteoric phenomena and embraces a wide range of problems of meteor astronomy including the use of meteors for geophysical investigations and for the transmission of information and precise time signals. Measurement equipment is described.

The book is intended for scientists, engineers and graduate and undergraduate students.

The table of contents is as follows:

USSR

SOLOV'YEV, Yu.I., et al, Izd-vo Kazanskogo universiteta, 1970, 700 copies
128 pages

2. Yu. A. Pupyshev, L. B. Shevchenko
"Solution of a System of Conditional Albegraic Equations of a High Order in Which Factors, Absolute Terms, and Unknowns are Positive Number" (p. 21)

3. V. S. Tokhtas'yev
"Ionization Probability in Meteor Trails" (p. 33)

4. V. S. Tokhts'yev
"Supplementary Ionization Mechanisms in Meteor Trails" (p. 51)

5. R. A. Kurganov
"Experimental and Theoretical Investigations of the Directivity Of Meteoric Radio Wave Propagation" (p. 65)

6. R. A. Kurganov, T. V. Kazakova
"The Necessity of Considering the Distribution of Velocities and the Density of the Falling Stream of Meteoric Particles in the Prediction of Meteoric Propagation of Radio Waves" (p. 88)

2/3

USSR

SOLOV'YEV, Yu.I., et al, Izv-vo Kazanskogo universiteta, 1970, 700 copies
128 pages

7. G. B. Pokrovskiy
"A Method of Determining the Character of the Wind in the Meteor Zone with the Use of Radar" (p. 98)

8. G. M. Teptin
"Calculating the Effect of the Antenna Directivity Pattern in the Determination of Atmospheric Movement Parameters" (p. 108)

9. V. V. Sidorov, A. N. Pleukhov
"The Problem of Determining the Time Position of Pulses Reflected from Meteor Trails" (p. 116)

10. G. M. Teptin
"Determination of Semistable Changes in the Upper Atmospheric Pressure" (p. 123)

3/3

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--USE OF AMMONIA TO NEUTRALIZE WASH WATERS -U-

AUTHOR-(03)-IVANOVA, YE.S., SHCHERBININA, S.D., KAPLINA, N.YA.

COUNTRY OF INFO--USSR

SOURCE--ENERGETIK 1970, (1), 10-11

DATE PUBLISHED--------70

K

SUBJECT AREAS--AGRICULTURE, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--INDUSTRIAL WATER, INDUSTRIAL WASTE TREATMENT, AMMONIA, SULFATE, FERTILIZER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1696 STEP NO--UR/0091/70/000/001/0010/0011

CIRC ACCESSION NO--AP0125317

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125317

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WASH WATERS CONTG. SO SUB4 PRIME2 NEGATIVE 14.75, FE 5.50, V 0.35, NI 0.065, CU 0.025 G-L., AND 0.38PERCENT H SUB2 SO SUB4 WERE NEUTRALIZED WITH EXCESS NH SUB3 5.6-6.0 KG-M PRIME3 (116PERCENT OF THEORETICAL) AND YIELDED SULFATE FREE PPTS. ENRICHED IN V AND NI. THE WATER CONTG. SIMILAR TO 2PERCENT (NH SUB4)SUB2 SO SUB4 IS USEFUL IS USEFUL AS A FERTILIZER AND THE GYPSUM FREE PPT. CONTG. FE SUB2 O SUB3 69.5, V SUB2 O SUB5 7.5, NI AND CU OXIDES 2.0 AND ORG. RESIDUES 19.4PERCENT CAN BE REUSED IN METALLURGY. THE NH SUB3 PPTN. REMOVES ALL THE INORG. AND ORG. (FUEL OIL OR UNCOMBUSTED COKE) MATERIALS COMPLETELY EXCEPT FOR NI AND CU. THE 2-3PERCENT OF NI AND CU REMAINING IN SOLN. CAN BE REMOVED BY CATION EXCHANGE ON A NH SUB3 WASHED SULFONATED COAL.

UNCLASSIFIED

USSR

KALADZE, V. A. and KAPLINSKIY, A. I.

"Synthesis of Two-Level Adaptive Random Search Algorithms"

Vopr. Optimal'n. Programmir. v Proizv. Zadachakh [Problems of Optimal Programming in Production Problems -- Collection of Works], Voronezh, 1972, pp 118-129 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V235)

Translation: The synthesis of two-level adaptive random search algorithms based on an approach common for both levels, indicating the common nature of all optimizing parameters for a given goal function, is studied. This work produces certain algorithms designed for search for local and global extremes, as well as random search algorithms with learning.

Author's view

1/1

USSR UDC: 51

KALADZE, V. A., KAPLINSKIY, A. I., RUBINSHTEYN, Ya. S.

"Adaptive Random Search Algorithms Modified for Use in 'Drift' Conditions"

Tashkent, Vopr. kibernetiki--sbornik (Problems of Cybernetics --collection of works), vyp. 53, 1972, pp 111-120 (from RZh--Kibernetika, No 5, May 73, abstract No 5V710 by the authors)

Translation: The authors investigate optimization of a unimodal object in a situation of measurement interference and extremum "drift". Regions of suitable application of the proposed algorithms are considered.

1/1

UDC 51

USSR

KARLINSKIY, A. I.

"Adaptive Tracing of Nonstationarities in Stochastic Optimization Problems"

V sb. Issled. operatsiy. Modeli, sistemy, resheniya. Vyp. 3 (Operations Research. Models, Systems, Decisions. vyp. 3 -- collection of works), Moscow, 1972, PP 156-168 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V504)

Translation: A study was made of the problems of optimizing averaged quality indexes when the effective disturbances cause "drift" of the desired extremal point. Adaptive algorithms for tracing the drifting extremal point are presented. The conditions of convergence of the presented algorithms are presented.

1/1

KAPLINSKIY A.I.

Acc. Nr: AP0106267 Ref. Code: UR0103

PRIMARY SOURCE: Avtomatika i Telemekhanika, 1970, Nr 3 , pp 122-133

OF STOCHASTIC APPROACH TO PROBLEMS OF NONLINEAR PROGRAMMING

A. I. KAPLINSKIY, A. I. PROPOY

There are considered the statements of the problems of stochastic programming and the relations among them under various degrees of information concerning the parameters in the conditions of the problem. There are stated the problems when the introduction of randomized strategies allows to improve the solution of the problem to a certain extent. It is shown that the solution of the problems of stochastic programming in randomized strategies is reduced to finitedimensional problems of nonlinear programming.

1/1

DI 4

REEL/FRAME
19881511

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EFFECT OF QUENCHING FROM ROLLING HEAT ON THE MECHANICAL AND TECHNOLOGICAL PROPERTIES OF STRUCTURAL STEELS -U-

AUTHOR-(05)-PISKUN, V.T., OLEYNIKOV, N.P., KAPLIY, N.I., IVASHCHENKO, V.M., STYCHINSKIY, L.P.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(2), 161-3

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--STRUCTURAL STEEL, STEEL QUENCHING, MECHANICAL PROPERTY, MANGANESE STEEL, SILICON STEEL, STEEL TEMPERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1867 STEP NO--UR/0133/70/030/002/0161/0163

CIRC ACCESSION NO--AP0115686

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0115686

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STEEL BARS (14-22 MM DIAM.) CONTG. C 0.16-0.35, MN 0.48-1.35, AND SI TRACE-1.05PERCENT WERE QUENCHED IN WATER FROM THE ROLLING HEAT FOR 10-14 SEC AND TEMPERED BY RESIDUAL HEAT. THE TREATMENT GENERALLY IMPROVED MECH. PROPERTIES, AS COMPARED WITH THOSE OF THE HOT ROLLED STOCK. FACILITY: DONETS. POLITEKH. INST., DONETSK, USSR.

UNCLASSIFIED

USSR UDC 621.314.57

KAPLOV, V.G.

"Characteristics Of Single-Phase Inverter With Multirange Smooth Voltage Control"

Tr. VNII zh.-d. transp. (Works Of The All-Union Scientific-Research Institute Of Railroad Transportation), 1970, Issue 416, pp 65-78 (From RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2B555)

Translation: An analytical computation is conducted of the electromagnetic processes of an inverter (dependent) regime with smooth voltage control when the separate sections of the transformer winding are provided with their own set of thyristors which achieve control of voltage in a fixed range (limits) of voltage. 3 ill. 2 ref. I.R.

1/1

USSR

UDC 539.4:539.56+620.172.24

CHEREPANOV, G. P., KAPLUN, A. B., KARASEV, L. P. (Moscow, Scientific Research Institute of Motor-Vehicle, Tractor, and Agricultural Machinery-Manufacturing Technology)

"Evaluation of the Influence of Residual Stresses on the Brittle Strength of Welded Bodies With Surface Defects"

Kiev, Problemy Prochnosti, No 12, December 1971, pp 30-35

Abstract: On the basis of the methods of linear mechanics of failure, equations have been obtained which permit evaluation of the brittle strength of a cylindrical shell with account taken of the value of the failure viscosity K_{Ic} of the most vulnerable zone of the shell material, the dimension of the most vulnerable crack-like defect, the values and distributions of the residual stresses (for example, welding stresses), and the geometrical dimensions of the shell. The equations referred to are presented for the case of an axial and an annular position of the defect.

The procedure for experimental determination of the failure viscosity K_{Ic} for various zones of a welded joint is briefly presented. The procedure provides for the testing of samples with an already obtained fatigue crack, and for bending through an angle. The load at which the sample fails is

1/2

USSR

CHEREPANOV, G. P., et al., Problemy Prochnosti, No 12, December 1971, pp 30-35

recorded. Examples are produced for determining the limit value of the internal pressure for welded cylindrical shells made of high-strength steel 43KhZSNVFMA and the titanium alloy VT14. These calculations make it possible to assess the degree of influence of residual stresses upon the carrying capacity of the shell. 5 tables. 3 figures. 6 references.

2/2

1/2 035 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--WORKING METHOD OF DETERMINING THE ENERGY OF RUPTURE OF A METAL -U-

AUTHOR-(04)-CHEREPANOV, G.P., KAPLUN, A.B., KARASEV, L.P., KUTEPOVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. KHIM. MEKHAN. MAT., 1970, 6, (1), 64-68

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--BEND TEST, STRESS CONCENTRATION, RUPTURE STRENGTH, THERMODYNAMIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1828 STEP NO--UR/0369/70/006/001/0064/0068

CIRC ACCESSION NO--AP0129196

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129196

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SIMPLE AND EFFICIENT METHOD OF DETERMINING THE RUPTURE ENERGY OF A METAL FROM THE RESULTS OF BENDING EXPERIMENTS CARRIED OUT ON CRACKED SAMPLES IS PROPOSED AND ITS THEORETICAL PRINCIPLES ARE EXPLAINED. THIS METHOD ENABLES SMALL SAMPLES CONTG. RELATIVELY LONG CRACKS TO BE TESTED; IT CONSTITUTES A SIMPLIFICATION OF EXISTING TEST PROCEDURES AND GIVES THE RUPTURE ENERGY DIRECTLY WITHOUT ANY COMPLICATED ANALYSIS OF THE EXPERIMENTAL RESULTS.

UNCLASSIFIED

USSR

UDC 547.426.2

KAPLUN, A. P., KABANOVA, M. A., SHVETS, V. I., and YEVSTIGNEYEVA, R. P., Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov

"Studies in the Area of Complex Lipids. Synthesis of the Phosphatide Acid on the Basis of 1,2-Diglyceride and o-Phenylene Chlorophosphate"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, pp 1617-1619

Abstract: A synthetic method was developed for the phosphatide acids utilizing phosphorylation of 1,2-diglycerides with o-phenylenechlorophosphate followed by removal of the protective groups. The phosphorylation was carried out at 18-20° using equimolar quantities of 1,2-di-O-palmitoyl-sn-glycerine and o-phenylenechlorophosphate in presence of triethylamine. 1,2-Di-O-palmitoyl-3-O-(o-phenylene)-phosphoryl-sn-glycerine can be hydrolyzed to the ester.

1/1

USSR

UDC 547.426.2

KAPLUN, A. P., KABANOVA, M. A., LYUTIK, A. I., SHVETS, V. I., and YEVSTIGNEYEVA, K. P., Moscow Institute of Fine Chemical Technology Imeni M. V. Lomonosov

"Study in the Area of Complex Lipids. Synthesis of Phospholidylethanolamines Based on 1,2-di-O-Acyl-sn-Glycerines"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, pp 1839-1844

Abstract: The synthesis of O-(1,2-di-O-palmitoyl-sn-glyceryl-3-O-phosphoryl)-ethanolamine was carried out starting with a 1,2-diglyceride and using 2-phtalimidoethyldichlorophosphate and 2-chloromethyl-4-nitrophenyldichlorophosphate as the phosphorylation agent. An effective method was developed for the formation of phosphodiester structure based on the model of phosphatidylethanolamine obtained from phosphatidylaacids and substituted ethanolamines or from ethanolamine phosphates and 1,2-diglycerides in presence of mesitylenesulfohylchloride.

1/1

USSR

UDC 547.752'759.5:542.953.4

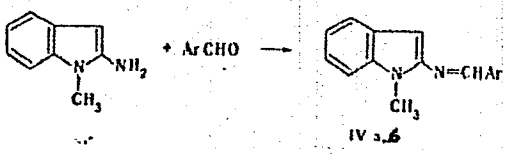
KOST, A. N., SAGITULLIN, R. S., MEL'NIKOVA, T. V., and KAPLUN, G. V., Moscow State University imeni M. V. Lomonosov

"Indole Chemistry. 32. Reaction of 1-Methyl-2-Aminoindole With Aldehydes"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 10, 1972, pp 1368-1373

Abstract: The 1-methyl-2-aminoindole will react with RCHO in alcoholic alkali to form a pentacyclic structure with the elimination of H_2O, NH_3, and H_2. By varying conditions, one mole of the HI salt of the aminoindole will condense with one mole of ArCHO to form a Schiff's base in the presence of base according to the reaction

[reaction II]



IV a,b

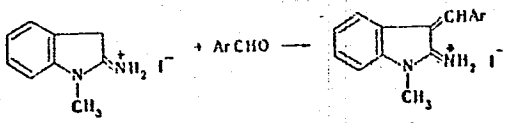
or a salt in its absence by

1/2

USSR

KOST, A. N., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 10, 1972, pp 1368-1373

[reaction I]



III a,b

(a:Ar={-3,4-$(CH_3O)_2C_6H_6$}; b:Ar={4-$(CH_3)_2NC_6H_4$}) IR spectra confirm the presence of these compounds. Several derivatives of 1,3-dimethyl-2-aminoindole were also prepared and characterized.

2/2

USSR

UDC 547.752'759.5:542.953.4

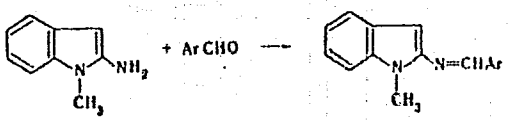
KOST, A. N., SAGITULLIN, R. S., MEL'NIKOVA, T. V., and KAPLUN, G. V., Moscow State University imeni M. V. Lomonosov

"Indole Chemistry. 32. Reaction of 1-Methyl-2-Aminoindole With Aldehydes"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 10, 1972, pp 1368-1373

Abstract: The 1-methyl-2-aminoindole will react with RCHO in alcoholic alkali to form a pentacyclic structure with the elimination of H_2O, NH_3, and H_2. By varying conditions, one mole of the HI salt of the aminoindole will condense with one mole of ArCHO to form a Schiff's base in the presence of base according to the reaction

[reaction II]



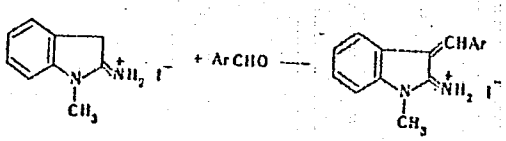
IV a,b

or a salt in its absence by

1/2

USSR

KOST, A. N., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 10, 1972, pp 1368-1373

[reaction I] 

III a,б

(a:Ar={-3,4-$(CH_3O)_2C_6H_6$}; b:Ar={4-$(CH_3)_2NC_6H_4$}) IR spectra confirm the presence of these compounds. Several derivatives of 1,3-dimethyl-2-aminoindole were also prepared and characterized.

2/2

Antennas

USSR

UDC 538.576.3:538.574.6

KAPLUN, V. A., ABRAMOV, V. V.

"Diffraction of Electromagnetic Waves by a Grid of Cylindrical Wires"

Moscow, Radiotekhnika i Elektronika, vol 16, No 11, Nov 71, pp 2038-2047

Abstract: A solution is found for the problem of diffraction of an electromagnetic wave incident at an arbitrary angle and arbitrary orientation of the polarization vector on a flat grid of cylindrical wires with a triangular cell shape. Account is taken in the solution of the interaction between the systems of parallel wires which make up the triangular grid. Experimental data are given which confirm the validity of the theoretical assumptions. Two examples are given. Three figures, bibliography of four titles.

1/1

ACC. Nr: AP0048810 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code: UR0080

92962c Absorption spectrum of a bromide complex of copper(II) in borosilicate glass. Veinberg, T. I.; Kaplun, V. A. (USSR). *Zh. Prikl. Khim. (Leningrad)* 1970, 43(1), 59–62 (Russ). Cu(II) bromide complexes are used to stain borosilicate glass. The nature of the complex was studied by comparison of the absorption spectra in the glass and the spectra of Cu(II) complexes in soln. The glass studied was $1K_2O.5B_2O_3.5SiO_2$, stained by CuO in the presence of excess KBr. KBr concn. was 0–5 parts by wt./100 parts by wt. of glass. Prepn. of the glass is described. Variation of Br^-/Cu^{2+} is due to evapn. of Br^- and Cu^{2+}-Cu^+ equil. An increase in KBr concn. shifts this equil. toward Cu^+. The absorption spectra of a series of glasses with varying KBr concn. were studied. Changes in intensity at 220, 270, 330, 500, and 610 nm show the change from octahedral CuO to tetrahedral $(CuBr_4)^{2-}$. Values of absorption coeffs. differ in soln. and in the glass. Redn. of Cu^{2+} is followed by absorption intensity.

Edward F. King

1/1

ALS

REEL/FRAME 19800573

7

1/2 011 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ABSORPTION SPECTRUM OF A CHLORIDE COMPLEX OF COPPER (II) IN BOROSILICATE GLASS -U-

AUTHOR-(02)-VEYNBERG, T.I., KAPLUN, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 450-1

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--COPPER COMPLEX, ABSORPTION SPECTRUM, OXIDE GLASS, BOROSILICATE GLASS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0453 STEP NO--UR/0080/70/043/002/0450/0451

CIRC ACCESSION NO--AP0104066

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104066

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABSORPTION SPECTRA OF K SUB2 O,B SUB2 O SUB3,SIO SUB2 GLASSES CONTG. 0.1PERCENT CUO WERE OBTAINED. ADDN. OF KCL TO THE GLASS LEADS TO THE APPEARANCE OF ABSORPTION PEAKS AT 235, 265, AND 380 NM; AT THE SAME TIME THE LONG WAVELENGTH PEAK SHIFTS FROM 800 TO LONGER WAVELENGTHS. THESE RESULTS WERE EXPLAINED BY THE FORMATION OF CUCL SUB4 PRIME2 NEGATIVE. THE DECREASED ABSORPTIVITY AT HIGHER KCL CONCNS. WAS CAUSED BY THE PARTIAL REDN. OF CU(II) TO CU(I). E. BEN ZVI.

UNCLASSIFIED

USSR UDC: 537.312.62

BARANOV, I. A., KAPLUN, Z. F.

"Superconducting Resonators"

Elektron. tekhnika. Nauch.-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific and Technical Collection. SHF Electronics), 1971, vyp. 4, pp 14-34 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D470)

Translation: The paper deals briefly with the physical results of research on the peculiarities of interaction of microwave signals in superconductors. The most important characteristics of known superconducting materials suitable for making microwave cavity resonators are presented. Methods of making superconducting resonators are considered as well as their parameters and areas of application. Resumé.

1/1

USSR UDC: 537.312.62

KAPLUN, Z. P., IVANITSKIY, K. P., DEDIK, Yu. V.

"A Unit for Coupling a Superconducting Resonator to External Waveguide Channels"

USSR Author's Certificate No 265595, filed 16 Feb 68, published 19 Jun 70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D642 P)

Translation: This Author's Certificate introduces a unit for coupling a superconducting resonator to external waveguide channels. The patent is based on Author's Certificate No 229625. As a distinguishing feature, the transient attenuation between the input and output waveguides is increased by making a section of the inner jacket of the cryostate located close to the gaps in the above-mentioned waveguides in the form of a truncated cone with angle of inclination of the generatrix of the order of 60° relative to the axes of the waveguides.

1/1

Electromagnetic Wave Propagation

USSR

UDC 537.3'2.02

KAPLUN, Z. F.

"The Use of Superconductivity in SHF Electronics. (Survey)"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific and Technical Collection. SHF Electronics), 1970, vy. 7, pp 3-15 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D523)

Translation: Use of the effect of superconductivity makes it possible to successfully solve many problems in SHF electronics associated with the introduction of new short-wave ranges, increasing efficiency and oscillator output power, reducing the noise factor of amplifiers, improving long-range and short-term frequency stability, and reducing the level of frequency noises of oscillators. These problems are considered in a number of works which are taken as the basis for this review. Resumé.

1/1

USSR

SMETANINA, L. B., LESHCHENKO, S. S., YEGOROVA, Z. S., STARODUBTSEV, D. S., KLINSHPONT, E. R., KAPLUNOV, M. Ya., and KARPOV, V. L., Scientific Research Physico-Chemical Institute imeni L. Ya. Karpov

"Radiation Structuralization of Ethylenepropylene Rubber In Presence of N-Phenylmaleimide Sensitizer"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 12, No 11, Nov 70, pp 2,401-2,407

Abstract: The process of radiation structuralization of ethylenepropylene rubber [SKEP] and its mixtures with N-phenylmaleimide [NPMI] was studied. It was determined that NPMI is a sensitizer for radiation crosslinking of SKEP, the rate of gel-formation being directly proportional to the quantity of NPMI added. The effect is neither ionic nor radical; addition of NPMI does not affect the production of free radicals and the recombination of the radicals is identical with or without NPMI; liberation of charges trapped in the traps shows also no effect on the process. It has been proposed that NPMI acts as an acceptor of hydrogen during the γ-irradiation, being reduced to N-phenyl-succinimide in the process. Thus it aids in production of more vinylidene bonds in SKEP and accelerates the crosslinking of SKEP.

1/1

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SCIENTIFIC WORK DONE IN THE PROBLEM LABORATORY OF THE RUBBER TECHNOLOGY DEPARTMENT OF THE M. V. LOMONOSOV INSTITUTE OF FINE CHEMICAL

AUTHOR-(04)-KORNEV, A.YE., KAPLUNOV, YA.N., GLAGOLEV, V.A., BUKANOV, A.M.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(4), 39-42

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--VULCANIZATION, FILLER, ELECTRIC CONDUCTIVITY, ELASTOMER, ADHESIVE, SCIENTIFIC R AND D, RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0534 STEP NO--UR/0138/70/029/004/0039/0042

CIRC ACCESSION NO--AP0119453

UNCLASSIFIED

2/2 025 UNCLASSIFIED

CIRC ACCESSION NO--AP0119453 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW WITH 25 REFS. TOPICS INCLUDE THE INFLUENCE OF VARIOUS VULCANIZATION RECIPE INGREDIENTS AND FILLERS ON PROPERTIES OF RUBBERS, RESINOUS MIXTS., AND RESINS; ELEC. CONDUCTING ELASTOMERS; USE OF ELASTOMERS AS ADHESIVES; AND TECHNOL. PROCESSES SUCH AS RESIN REGENERATION. FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 911.3:616.927(575.1)

NEVSKIY, M. V., YUSUPOV, K. Yu., AMINADZE, Z. M., KAPLUNOVA, M. S., and PULATOV, Ya. G.

"Morbidity Dynamics of Typhoid and Paratyphoid Fever in the Uzbek SSR"

Nauchn. tr. uchenykh i prakt. vrachey Uzbekistana (Scientific Works of Research and Practicing Physicians in Uzbekistan) 1970, sb. 6, pp 16-20 (from RZh-Meditsinskaya Geografiya, No 4, Abstract No 4.36.203)

Translation: During the years 1958-1965, the Uzbek SSR registered a decrease in the number of cases of all typhoid and paratyphoid by a factor of 2.4; typhoid by a factor of three, while the number of paratyphoid fever cases remained unchanged. In cities the number of typhoid-paratyphoid cases decreased three-fold; in rural areas -- two-fold. In 1958 45.7% of the patients in rural areas had typhoid-paratyphoid and in 1965 -- 54.6%. In the total paratyphoid picture for the past three years, the prevailing form was paratyphoid B, responsible for a 79% morbidity.

NAVINTSC TRANS-3450-73

DEPARTMENT OF THE NAVY
NAVAL INTELLIGENCE SUPPORT CENTER
TRANSLATION DIVISION
4301 SUITLAND ROAD
WASHINGTON, D.C. 20390

A copy
B Pers/Pgs
Comus

CLASSIFICATION: UNCLASSIFIED

APPROVED FOR PUBLIC RELEASE, DISTRIBUTION UNLIMITED

TITLE: Application of Factor Analysis to the Study of the Functional Organization of Dynamic Characteristics of Cerebral Electrical Activity

AUTHOR(S): Primenenie faktornogo analiza dlya issledovaniya funktsional'noy organizatsii dinamicheskikh kharakteristik bioelektricheskoy aktivnosti golovnogo mozga
Bundzen, P.V., Vasilevskiy, N.N., Kaplunovskiy, A.S., and Shabayev, V.P.

PAGES: 6

SOURCE: Sechenov Physiological Journal of the USSR, Vol. 57, No. 7, 1971 Pages 969-973

ORIGINAL LANGUAGE: Russian

TRANSLATOR: CRM

NISC TRANSLATION NO. 3450

APPROVED f.i.k.

DATE 11 July 1973

KAPLUNOVSKIY, A.S.

APPLICATION OF FACTOR ANALYSIS TO THE STUDY OF THE FUNCTIONAL ORGANIZATION OF DYNAMIC CHARACTERISTICS OF CEREBRAL ELECTRICAL ACTIVITY

[Rundzen, P.V., N.N. Vasilevskiy, A.S. Kaplunovskiy, and V.V. Shahagyev,
Primenenie faktornogo analiza dlya izucheniya funktsional'noy organizatsii
dinamicheskikh kharakteristik bioelektricheskoy aktivnosti golovnogo
mozga, Sechenov Physiological Journal of the USSR, Vol. 57, No. 7, 1971,
pp. 969-973, Russian]

Department of Ecological Physiology (Director N.N. Vasilevskiy) and the Pavlov Physiological Department (Director M.M. Khananashvili) Institute for Experimental Medicine, Academy of Medical Sciences, USSR, Leningrad.

The characteristics and methods of factor analysis, as well as the algorithm and program of the principal components method for the "Fromin" digital computer system are described. The theoretical possibility of applying factor analysis in neurophysiology is shown in: a) an investigation of the structure of a single electrophysiological process on the basis of electrocorticographic dynamic spectra calculations, and b) a comparison and classification of poststimulation histographs of the induced activity of projection cortical neurons in response to a conditioned stimulus.

Thus, factor analysis is valuable as a statistical method in neurophysiology, making it possible to present experimental data in a convenient form and aiding in a purposeful search.

As an integral statistical method of evaluating the functional organization of complex dynamic process, factor analysis is now receiving increasing application in physiological research [5, 8, 9, 12, and 13].

The purpose of the present study was to develop a program and to apply factor analysis for statistical processing of experimental neurophysiological material for the purpose of clarifying the set of conditions (factors) which determine the dynamic characteristics of cerebral bioelectrical activity, particularly when studying control processes at the level of continuous wave and pulse activity of the higher regions of the central nervous system.

As is well known [3, 4, and 14], at the basis of factor analysis is the calculation of a correlation matrix and its reduction to a more compact form that lends itself more easily to interpretation.

USSR

UDC 612.821.7+612.822.3.08

KAPLUNOVSKIY, A. S., and BOGOSLOVSKIY, M. M., Department of Ecological Physiology, and Physiological Department imeni I. P. Pavlov, Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"The Use of Factor Analysis for the EEG Character of Sleep"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 8, Aug 73, pp 1291-129

Abstract: The use of factor analysis to compare simultaneous processes and interconnections of the EEG of various areas of the neuronally isolated cerebral cortex during wakefulness and sleep is discussed. This method consists of calculating correlation and factor matrices, finding the correlation efficiency K, constructing matrices for K, factoring them and applying biplot analysis. The analysis of the EEG of intact and isolated cats is given as an example. From the various factors isolated the authors conclude that wakefulness and light sleep are connected with the motor and parietal regions of the isolated cortex, while deeper sleep is connected with the occipital region, both isolated and intact, and slow wave and REM sleep are connected with the parietal region of the intact cortex.

1/1

USSR

UDC: 612.826+612.822.3

KLIMENKO, V. M. and KAPLUNOVSKIY, A. S., Division of General Pathology (Headed by P. N. Veselkin) and Division of Ecological Physiology (Headed by N. N. Vasilevskiy), Institute of Experimental Medicine of the USSR Academy of Medical Sciences, Leningrad

"Statistical Investigation of the Pulsed Activity of Neurons of Different Parts of the Hypothalamus"

Leningrad, Fiziologicheskiy zhurnal SSSR im. I. M. Sechenova, No 10, vol 58, 1972, pp 1484-1493

Abstract: The authors find that the most promising method of investigating central mechanisms for providing the various reactions occurring in the organism in the normal and pathological states is on the cellular level, on the basis of an analysis of neuron pulse activity. In their experiments for this investigation, they chose 22 rabbits weighing from 2.8 to 3.0 kg, and introduced polyethylene catheters into the femoral vein and urinary bladder of the animals after narcotizing them with intravenous hexanal; the first catheter was used to introduce tubocurarin, while the second served as a free drain for urine flow during the experiment. The

USSR

KLIMENKO, V. M., et al., Fiziologicheskiy zhurnal SSSR im. I. M. Sechenova, No 10, vol 58, 1972, pp 1484-1493

arch of the skull was opened for connection to stereotaxic equipment, and the hypothalamus was reached through trepanning. In all, 391 hypothalamic neurons were investigated and their activity analyzed. It was found that the overwhelming majority of the neurons had a mixed type of activity in which packets, groups, and single pulses combined. It was also found that in extended time intervals of as much as 30 minutes, the average pulsation frequency level of the neurons did not vary.

2/2

USSR

UDC: 621.396.677.833.3

GOL'DSHTEYN, Yu. A., KAPLYANSKIY, A. A.

"Concerning the Question of Required Accuracy in Measuring the Parameters of the Large Reflector in a Two-Reflector Antenna With Phase Correction"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t svyazi. Vyp. 3 (Materials of the Scientific and Technical Conference of Leningrad Electrical Engineering Institute of Communications--collection of works, No 3), Leningrad, 1971, pp 257-259 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3B62)

Translation: Relations are presented which define the parameters of the small correcting reflector, assuming that the main reflector has an arbitrary shape; the required accuracy of measuring the parameters of the reflector is estimated. Bibliography of two titles. Resumé.

1/1

USSR

UDC: 621.396.677.833.3

KAPLYANSKIY, A. A., PERSIKOV, M. V.

"Concerning the Possibility of Phase Correction on the Small Reflector of a Two-Reflector Spherical Antenna"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t svyazi. Vyp. 3 (Materials of the Scientific and Technical Conference of Leningrad Electrical Engineering Institute of Communications--collection of works, No 3), Leningrad, 1971, pp 253-257 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3B61)

Translation: Redistribution of the field in the aperture of a spherical reflector is analyzed in the geometric optics approximation in the case of axisymmetric deformations with subsequent phase correction by changing the shape of the small reflector. Two illustrations, bibliography of five titles. Resumé.

1/1

USSR

UDC: 536.2

PETROV, V. A., PETROVA, I. I., NESHPOR, V. S., FRIDLENDER, B. A., KAPRALOV, V. K., BELIK, R. V., Institute of High Temperatures of the Academy of Sciences of the USSR, State Institute of Applied Chemistry

"Some Thermophysical Properties of Isotropic Pyrolytic Graphite"

Moscow, Teplofizika Vysokikh Temperatur, Vol 11, No 2, Mar/Apr 73, pp 308-313

Abstract: A study is done on the electrical resistance, thermal conductivity and radiative characteristics of pyrolytic graphite which lacks a preferred orientation of the crystallographic planes with respect to the deposition surface. The measurements were made on specimens with densities ranging from 1.76 to 2.19 g/cc over a wide temperature interval. The behavior of the properties as a function of density and temperature is explained in terms of peculiarities of the defect structure of isotropic pyrographite.

1/1

USSR

UDC 620.179.152

GORBUNOV, V. I., NEDAVNIY, O. I., KAPRANOV, B. I., ANDREYEV, M. D., DANILOVICH, A. KH., GIZATULLIN, G. G., ZABRODSKIY, V. A., and OPOKIN, V. I., Scientific Research Institute of Electron Introscopy of the Tomsk Polytechnic Institute imeni S. M. Kirov

"Possibility of Checking Aluminum Articles Using Inversely Scattered X-Rays "

Sverdlovsk, Defektoskopiya, No 5, Oct 73, pp 43-46

Abstract : The theoretical premise of the method of checking welded closing joints of aluminum structures 5 mm thick using inversely scattered x-rays is considered. A description is given of the detection head of the defectoscope. The experimental data which characterize the limitations of the albedodefectoscope are presented. The effective sensitivity for exposing imperfections of the cavity type is 0.5 mm^3. Further increase of sensitivity can be attained by increasing the capacity of the tube. Five illustrations.

1/1

USSR UDC 669.14.018.298:621.791.053:620.18

SHTRIKMAN, M. M., KAPRANOVA, I. P., and ROMANOVA, Ye. T.

"Structure and Properties of Weld Metal of N18K9M5T Steel With an Aging Martensite Structure"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1972, pp 18-22

Abstract: The effect of argon-arc welding of N18K9M5T steel on the structure and mechanical properties of the weld metal was studied. Plates 15 mm thick and cylindrical samples 100 mm in diameter with 20-mm walls were welded manually and automatically using tungsten electrodes. Three methods of welding were tried: (1) heating of the weld metal to 250-350°C after each passage; (2) continuous welding with interruptions between each weld layer in order that each layer be cooled to 200°C and not lower; (3) cooling of each weld layer to room temperature. The results indicated that cooling of each layer to room temperature causes aging of lower metal layers and decreases the impact toughness of the weld. Welding without cooling of each layer below 200-220°C eliminates the aging of the weld metal, produces stable metal structure, improves mechanical properties, and produces high impact toughness. Hardening of the weld metal at 920°C for 1 hr with subsequent cooling in air equalizes the structure of the weld metal and increases the

USSR

SHTRIKMAN, M. M., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1972, pp 18-22

impact toughness. The impact toughness of samples welded manually was higher than that of samples welded automatically. This was probably due to a lesser number of microdefects in the weld.

USSR UDC: 621.374.5

KHANOVICH, I. G., KAPRANOV, R. I.

"Principles of Designing Wide-Band Thermostable Electromechanical Miniaturized Delay Lines"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t svyazi. Vyp. 4 (Materials of the Scientific and Technical Conference of Leningrad Electrical Engineering Institute of Communications--collection of works, No 4), Leningrad, 1971, pp 135-140 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3G344)

Translation: In addition to experimental confirmation of the theoretical principles of development of electromechanical delay lines with a metal strip acoustic line, this paper gives the basic results of studies done during the design, construction and testing of experimental batches of a new type of delay line. Bibliography of five titles. Resumé.

1/1

Acc. Nr: KAPRANTSEV I.G Ref. Code:
AA0108719 Abstracting Service: 3-70 UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

243755 WELDING MACHINE FOR STRAIGHT T-BEAMS has welding heads, positioning rollers and driving rollers all mounted on a beam which can be pivoted in the vertical plane. This imparts a bending stress to the T-beam being welded, so counteracting the opposite stress due to welding.

30.3.67 as 1145211/25-27. M.I.SHALYAPIN, S.N.ADAMENKO & A.M. PALLER et al. (3.10.69) Bul 17/14.5.69. Class 21h. Int.Cl. B 23k.

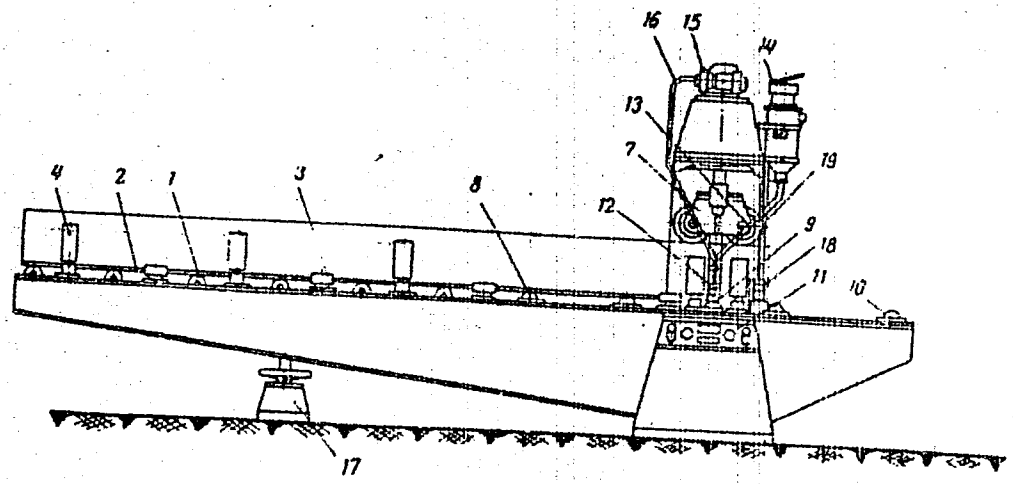
AUTHORS: Shalyapin, M. I.; Adamenko, S. N.; Paller, A. M.; Kaprantsev, I. G.

18

1/2

REEL/FRAME
19900492

AA0108719



2/2

19900493

13 S

USSR

UDC 620.172.251.224

YEFTIKHIN, V. A., ZVEZDIN, Yu. I., KAPRIZOV, V. A., and PUGACHEV, G. S.

"Device for Creep and Fatigue Strength Tests of Metals at High Temperatures in a Vacuum of the Order of 10^{-9}mm Hg"

Moscow, Zavodskaya Laboratoriya, No 2, 1971, pp 228-230

Abstract: A device for creep and fatigue strength tests of metals at high temperatures in a vacuum of the order of 10^{-9}mm Hg is described. Its main components - vacuum system, electro-supply and control systems, charging device, heater, and deformation measuring system - are discussed in detail by reference to a diagram. Results of fatigue strength tests of some niobium alloys in a vacuum of 10^{-7} — 10^{-9}mm Hg are demonstrated and compared with tests conducted on the PB-3012 unit producing a vacuum of 10^{-6}mm Hg. It is concluded that a vacuum of at least 1×10^{-8}mm Hg which is free of oil vapors must be used to obtain the correct strength characteristics of the investigated metals.

1/1

USSR

UDC 66.074.7:546.65

BREZHNEVA, N. Ye., DEMENT'YEV, V. D., KAPSHANINOV, Yu. I., and POPOV, I. B.

"A Study of Ion Exchange Between Ceolites and Radioactive Rare Earth Elements"

Leningrad, Radiokhimiya, Vol XIII, No 3, 1971, pp 411-416

Abstract: Synthetic zeolites, which have greater radiation-chemical and thermal resistance than organic resins, are of particular interest in connection with their use in various areas of radiochemistry, especially their application in the sorption decontamination of radioactive waste, in the extraction of radioisotopes to concentrate them before burial, and in obtaining radiation sources. However, in regard to ion-exchange, no one has been able to secure substitution of the zeolite Na^{+} and Ca^{2+} ions with the ions of a metal having a valence greater than 1 or 2, with the exception of the 27% exchange for A-type zeolite, and 60% exchange for X-type zeolite, achieved at the disadvantage of increase in the amorphous phase (trivalent cerium was the substitute ion). In the present study, previously dehydrated zeolite was used in conjunction with a complexing agent, on the assumption that the rare-earth ions would form with the agent adsorbed on the zeolite

1/2

USSR

BREZHNEVA, N. Ye., et al., Radiokhimiya, Vol XIII, No 3, 1971, pp 411-416

just the same complexes as in a solution, while the complexes themselves, MeA^{+} and MeA^{2+}, would behave as mono- and bivalent ions, and thus be capable of exchanges without the formation of a polar structure.

It is shown that maximum exchange capacity of NaX-type zeolites, for all elements studied, was the same (0.360 mg-equiv per 100 mg zeolite), and that the degree of substitution of Na ions was 82%. The following array of selectivity was found to be present: $La^{3+} > Ce^{3+} > Pr^{3+} > Nd^{3+} > Pm^{3+} > Sm^{3+}$; this holds up to about the level of 80% exchange, after which the order of selectivity is reversed. It was shown, further, that degree of exchange is quite independent of the concentration of the initial rare-earth element solution, at least within the range of solutions from 0.01 to 1 N. Finally, it was shown that the mobility of rare-earth ions in a zeolite is lower than that of sodium ions.

2/2

USSR

UDC 541.127:543.544.6:546.65

BREZHNEVA, N. YE., DEMENT'YEV, V. D., KARSHANINOV, YU. I., and POPOV, I. B.

"Ion Exchange Kinetics of Rare Earth Elements on NaX Zeolite"

Leningrad, Radiokhimiya, Vol 13, No 4, 1971, pp 525-530

Abstract: Ion exchange kinetics of La^{3+}, Ce^{3+}, Pr^{3+}, Nd^{3+} and Sm^{3+} on the synthetic zeolite NaX was studied. It was shown that the determining step in ion exchange process is the stage of the penetration of ions into the ion exchange resin. The diffusion coefficients are constant for each ion up to 50% of exchange; they increase with rising exchange temperature and are inversely proportional to the ionic radius. The function $\log D_i - \frac{1}{T}$ is linear for all ions in the temperature range studied. The activation energy of this process decreases proportionately to the decrease in ionic radius. It was shown that the cations are not dehydrated in the ion exchange process. By extrapolation the energy of activation and coefficient D_o for the diffusion of Pm^{3+} ion into the NaX zeolite have been determined.

1/1

USSR

UDC 612.1-06:612.865/.867

NAVAKATIKYAN, A. O., KUNDIYEV, Yu. I., LYSINA, G. G., TOMASHEVSKAYA, L. I., MERKACH, V. S., KAPSHUK, A. P., KOVALEVA, A. I., STANISLAVSKAYA, TS. D., OSINSKAYA, L. S., and PARLYUK, A. F., Kiev Institute of Industrial Hygiene and Occupational Diseases

"Effect of Mental Work Accompanied by Nervous and Emotional Stress of Varying Degrees on the Cardiovascular System"

Moscow, Kardiologiya, No 3, 1973, pp 50-56

Abstract: In addition to making a statistical analysis of 1,585 cases of myocardial infarction among Kiev workers, the authors ran physiological studies on engineers, typesetters, mathematicians, and neurosurgeons. They found that the effects of mental work on the cardiovascular system vary with the degree of nervous tension and some other factors. The manifestations range from incipient functional disturbances of regulation to severe pathology. Moderate tension elevates blood pressure, the increase in systolic and diastolic pressures being related. Great tension, however, tends to disrupt the relationship probably because the centers regulating vascular tonus become uncoordinated. Intense nervous and emotional strain increases the heart beat as well as the "slow" waves among the periodic constituents of the correlation function of

USSR

(6)

NAVAKATIKYAN, A. O., et al., Kardiologiya, No 3, 1973, pp 50-56

the cardiac rhythm, an indication of an intensification of central neuroendocrine influences on cardiac activity. As the tempo of work and degree of emotional stress increase, the amount of catecholamines and 17-hydroxycorticoids excreted with urine also gradually increases. Thus, tense mental work markedly affects the cardiovascular system. The resulting changes correlate with the functions of the sympathico-adrenalin system and adrenal cortex.

2/2